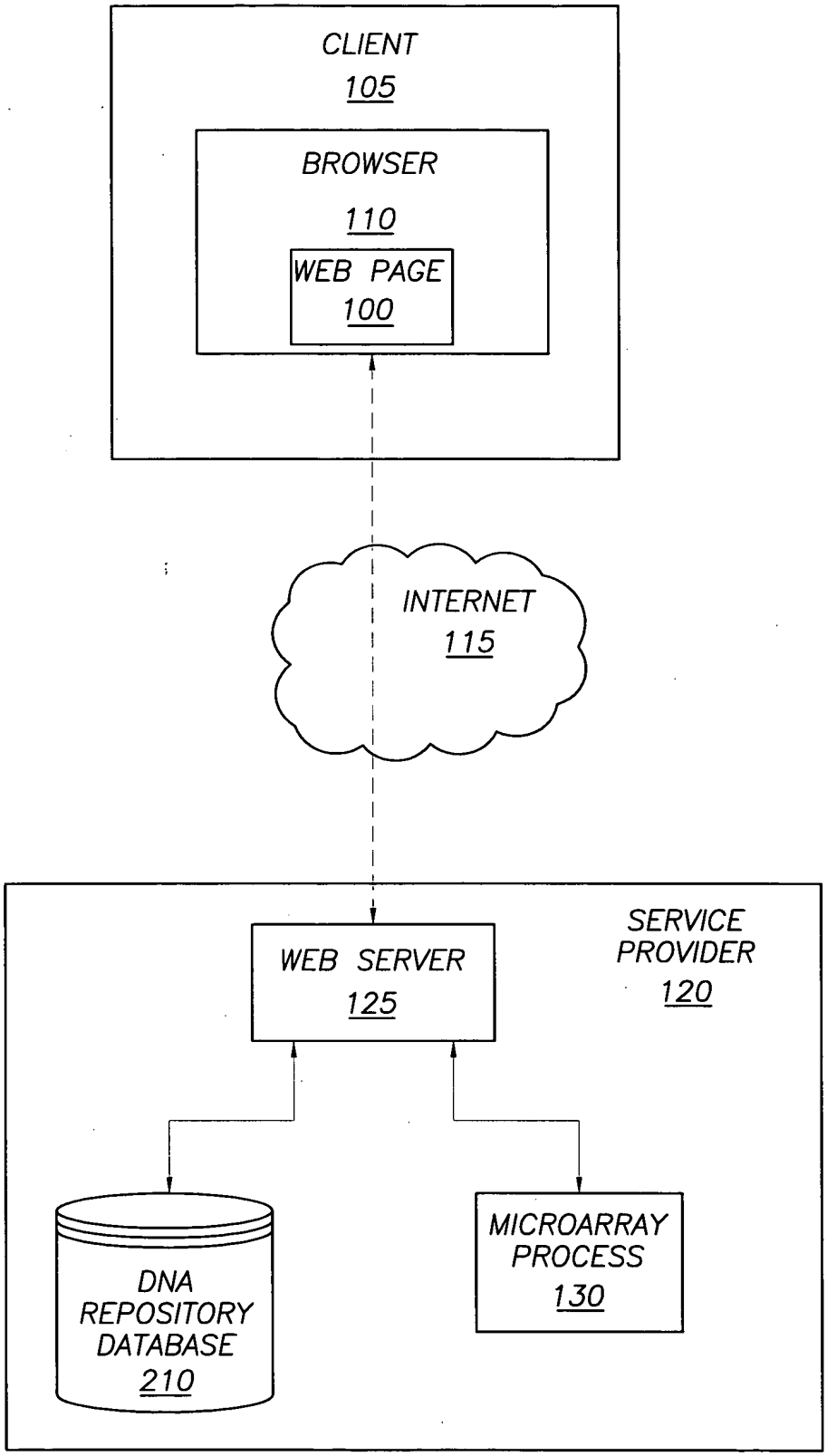

CLIENT
105
BROWSER
110
WEB PAGE
100
INTERNET
115
SERVICE
PROVIDER
120
WEB SERVER
125
DNA
REPOSITORY
DATABASE
210
MICROARRAY
PROCESS
130

FIG. 1

FIG.2

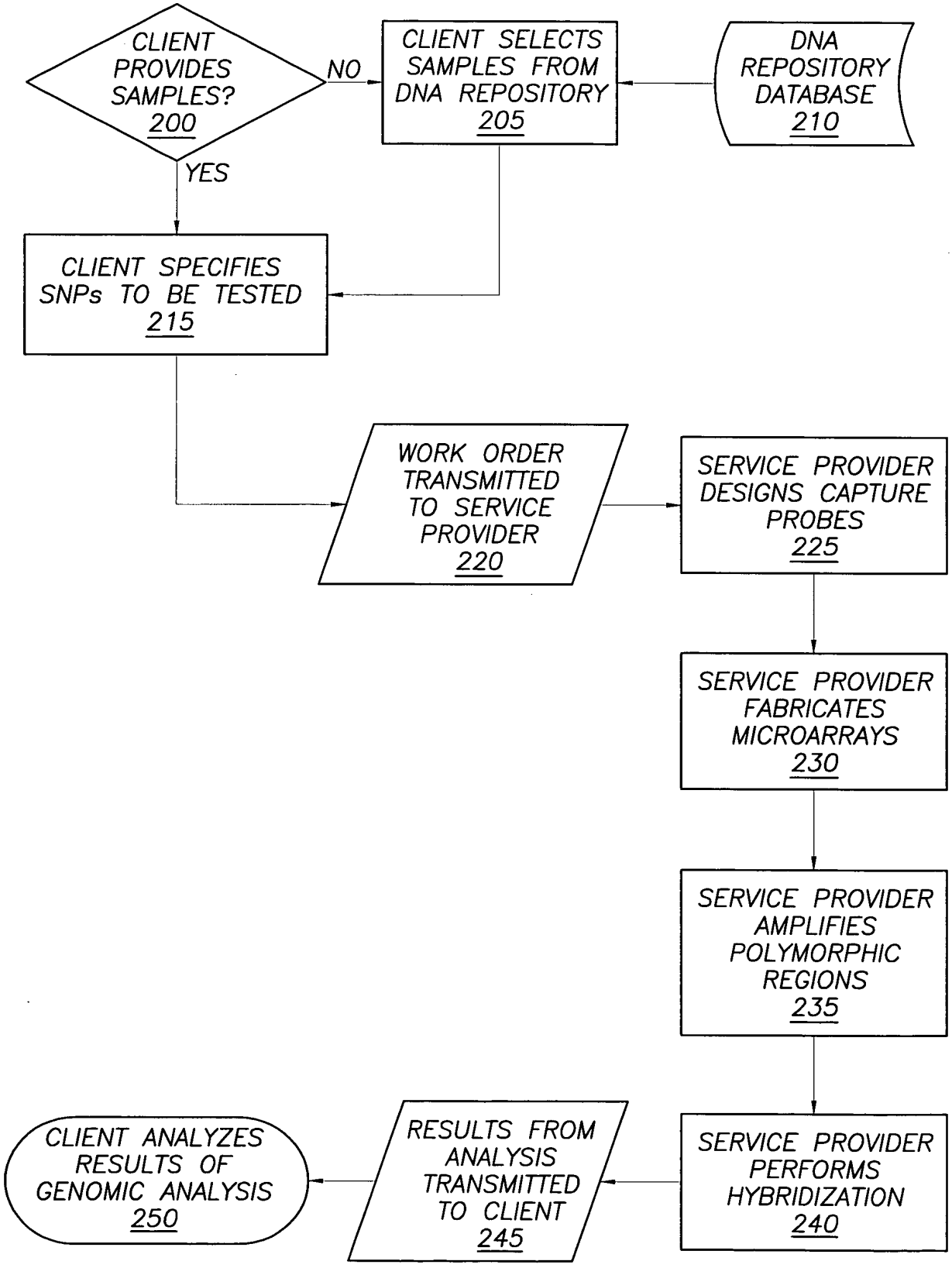

CLIENT PROVIDES SAMPLES? 200
NO
CLIENT SELECTS SAMPLES FROM DNA REPOSITORY 205
DNA REPOSITORY DATABASE 210
YES
CLIENT SPECIFIES SNPs TO BE TESTED 215
WORK ORDER TRANSMITTED TO SERVICE PROVIDER 220
SERVICE PROVIDER DESIGNS CAPTURE PROBES 225
SERVICE PROVIDER FABRICATES MICROARRAYS 230
SERVICE PROVIDER AMPLIFIES POLYMORPHIC REGIONS 235
SERVICE PROVIDER PERFORMS HYBRIDIZATION 240
RESULTS FROM ANALYSIS TRANSMITTED TO CLIENT 245
CLIENT ANALYZES RESULTS OF GENOMIC ANALYSIS 250

FIG.3

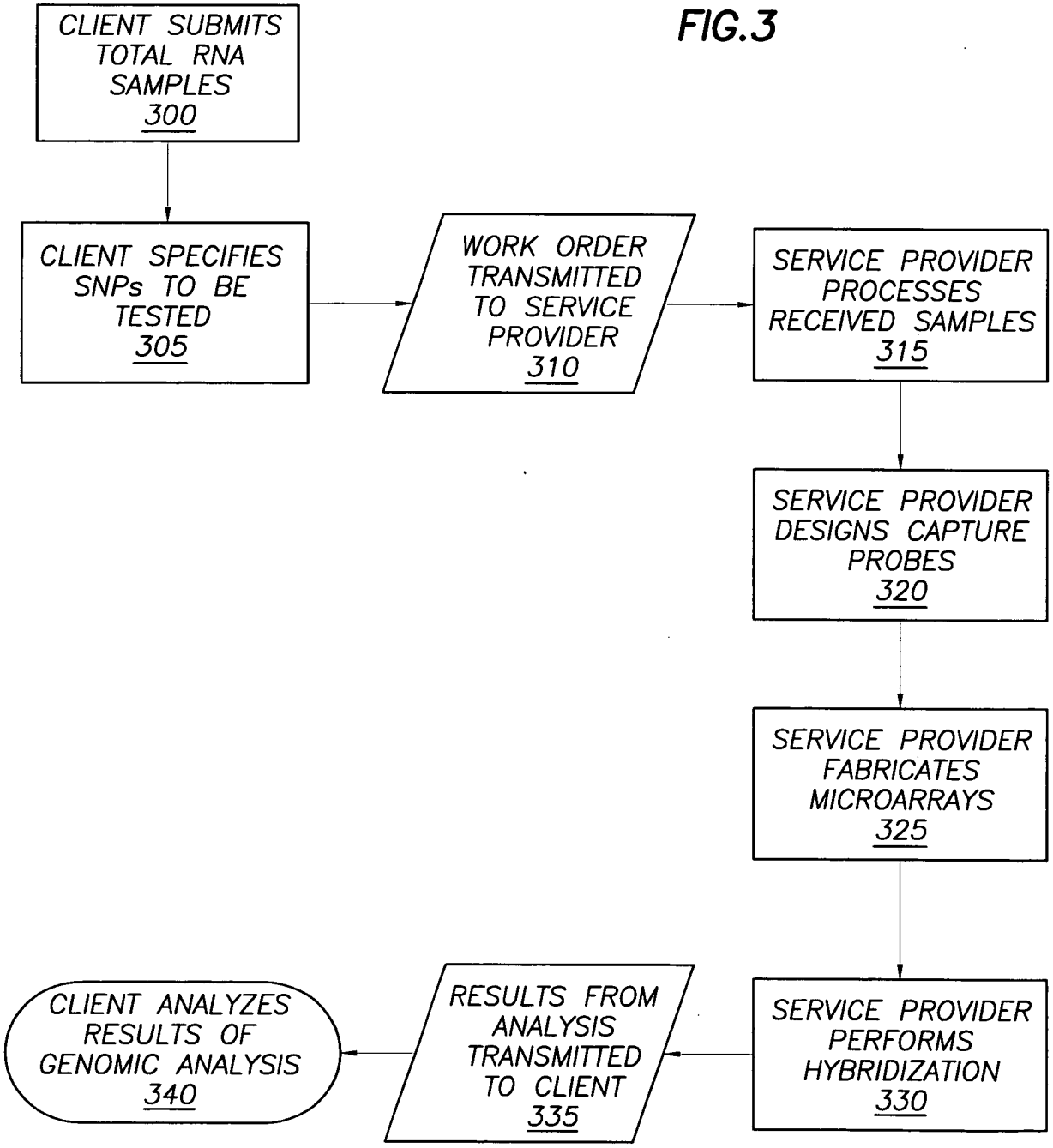
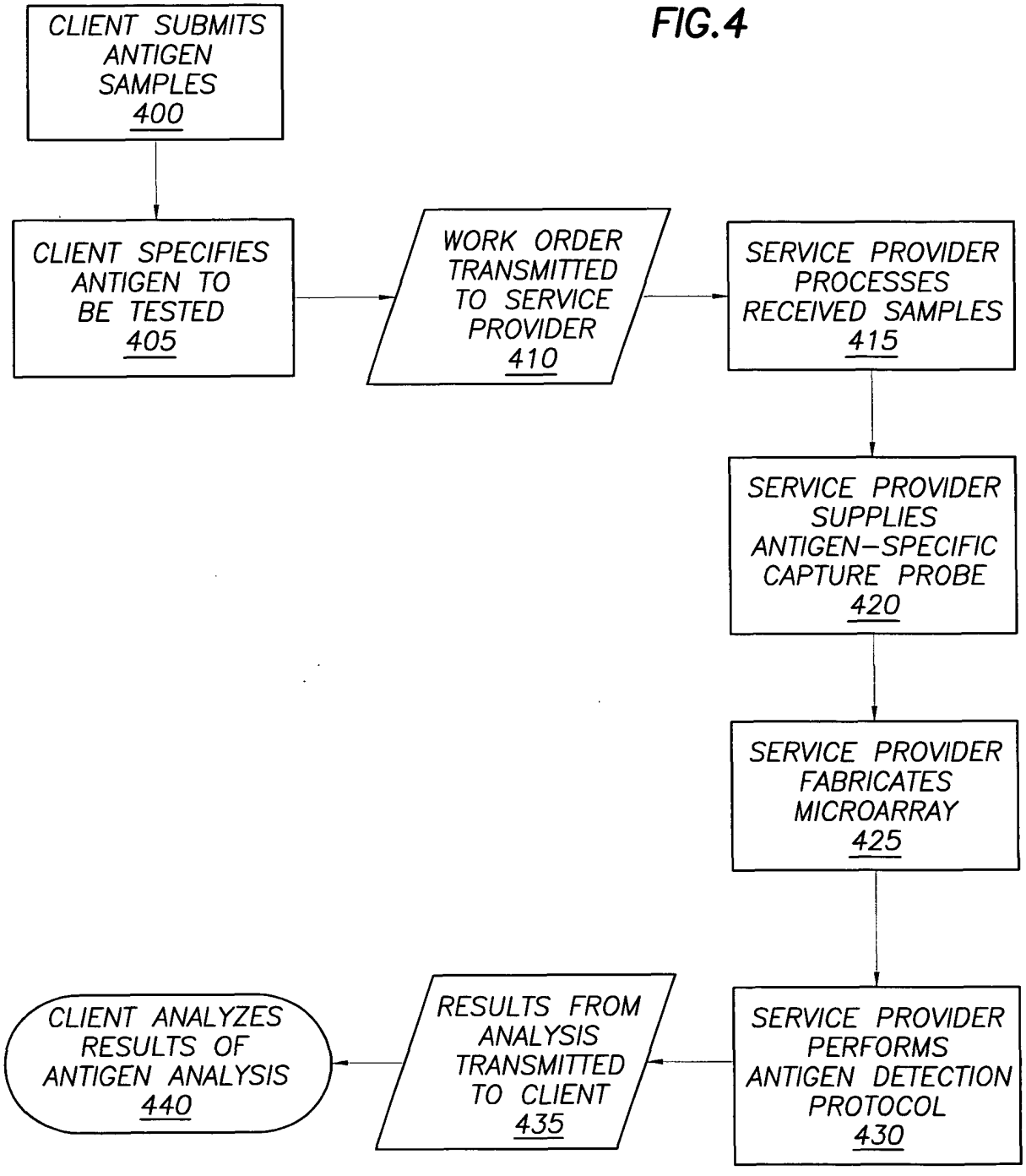

CLIENT SUBMITS TOTAL RNA SAMPLES 300
CLIENT SPECIFIES SNPs TO BE TESTED 305
WORK ORDER TRANSMITTED TO SERVICE PROVIDER 310
SERVICE PROVIDER PROCESSES RECEIVED SAMPLES 315
SERVICE PROVIDER DESIGNS CAPTURE PROBES 320
SERVICE PROVIDER FABRICATES MICROARRAYS 325
SERVICE PROVIDER PERFORMS HYBRIDIZATION 330
RESULTS FROM ANALYSIS TRANSMITTED TO CLIENT 335
CLIENT ANALYZES RESULTS OF GENOMIC ANALYSIS 340

FIG.4


CLIENT SUBMITS ANTIGEN SAMPLES 400
CLIENT SPECIFIES ANTIGEN TO BE TESTED 405
WORK ORDER TRANSMITTED TO SERVICE PROVIDER 410
SERVICE PROVIDER PROCESSES RECEIVED SAMPLES 415
SERVICE PROVIDER SUPPLIES ANTIGEN-SPECIFIC CAPTURE PROBE 420
SERVICE PROVIDER FABRICATES MICROARRAY 425
SERVICE PROVIDER PERFORMS ANTIGEN DETECTION PROTOCOL 430
RESULTS FROM ANALYSIS TRANSMITTED TO CLIENT 435
CLIENT ANALYZES RESULTS OF ANTIGEN ANALYSIS 440

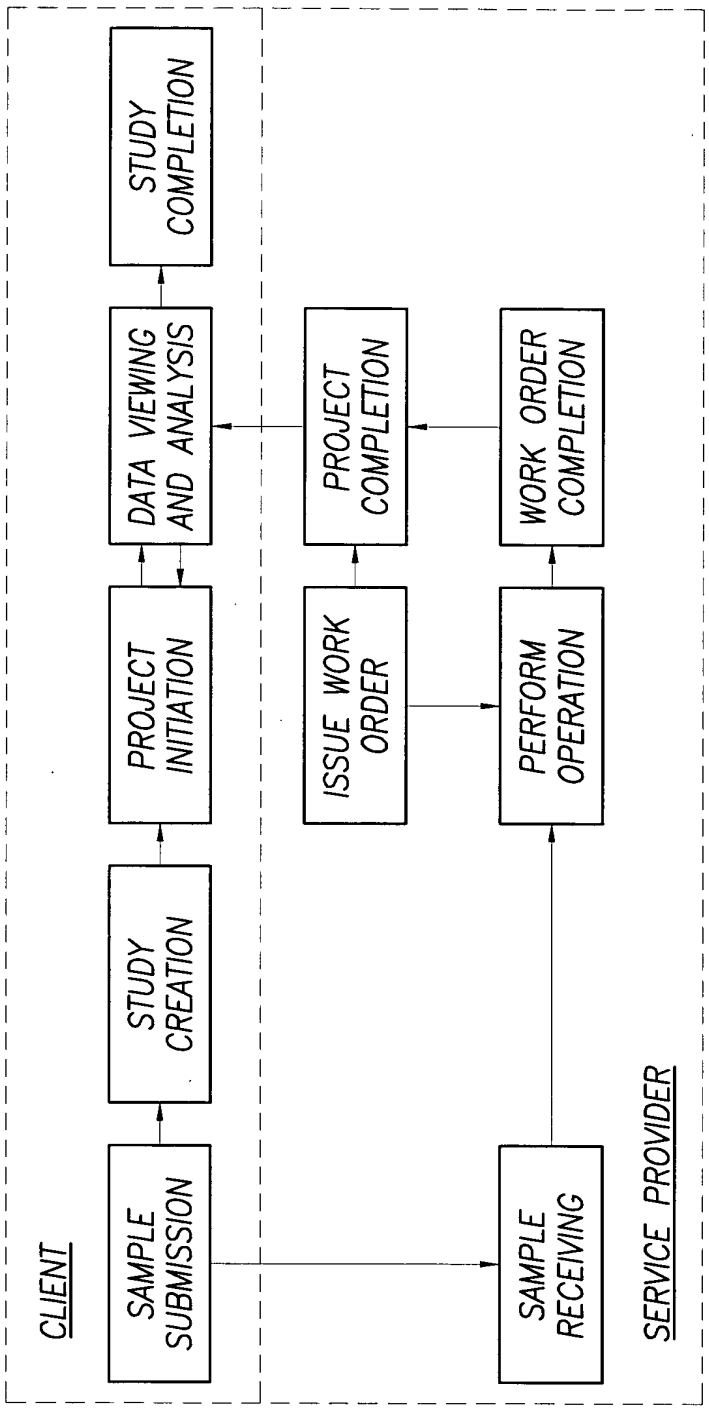


FIG.7

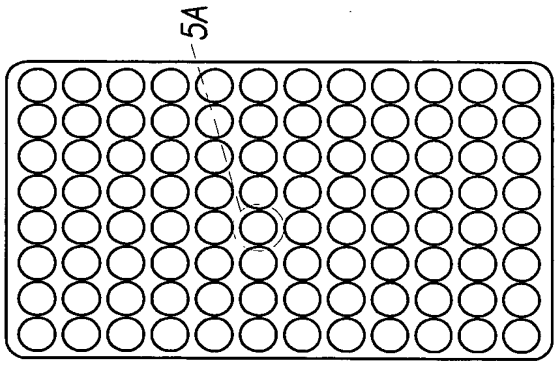


FIG.5

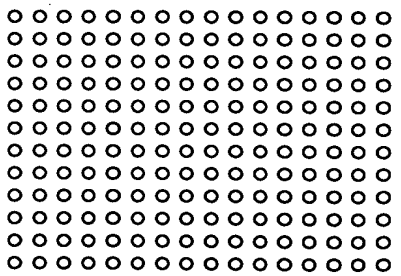
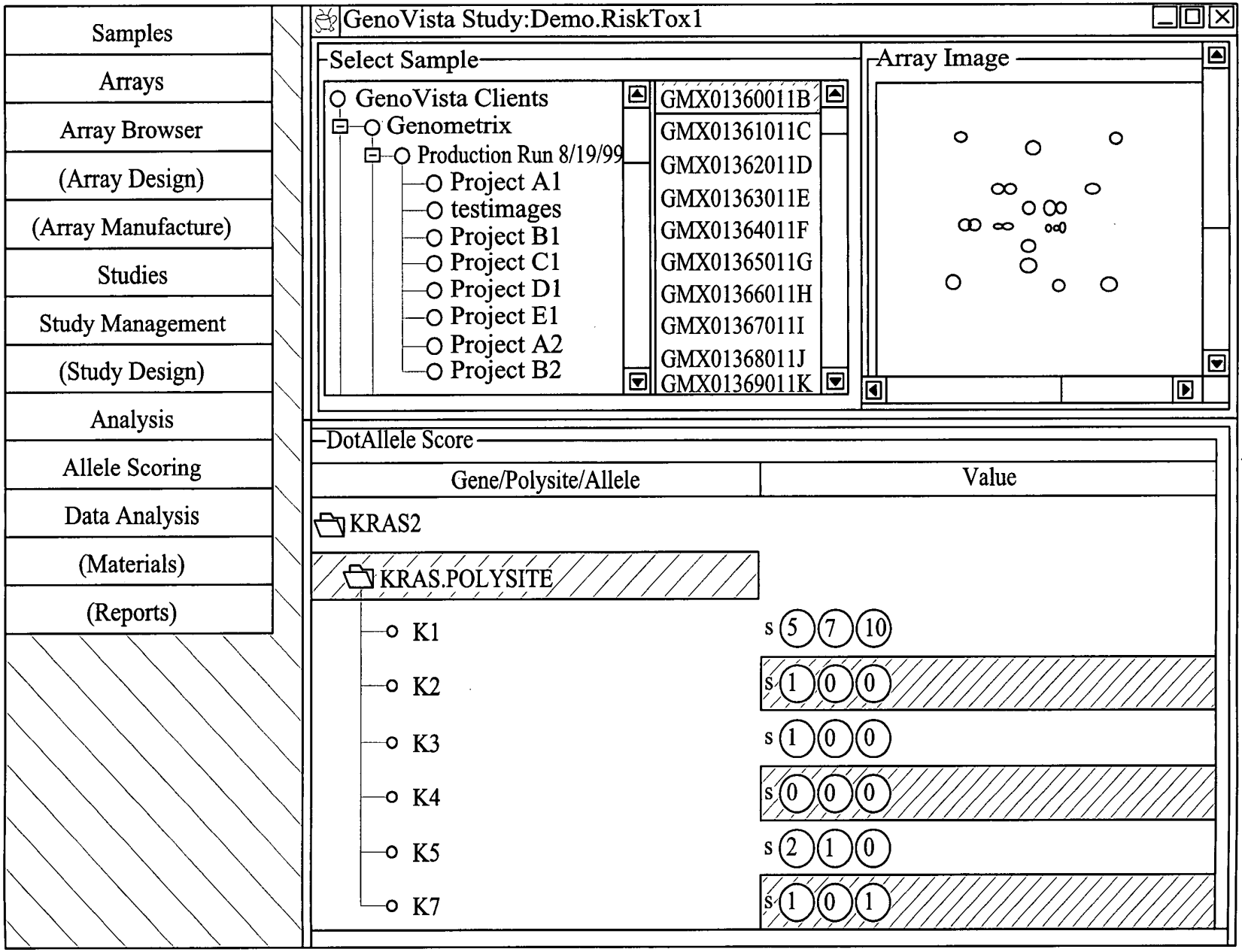


FIG.5A

FIG.6


Samples
Arrays
Array Browser
(Array Design)
(Array Manufacture)
Studies
Study Management
(Study Design)
Analysis
Allele Scoring
Data Analysis
(Materials)
(Reports)
GenoVista Study:Demo.RiskTox1
Select Sample
GenoVista Clients
Genometrix
Production Run 8/19/99
Project A1
testimages
Project B1
Project C1
Project D1
Project E1
Project A2
Project B2
GMX01360011B
GMX01361011C
GMX01362011D
GMX01363011E
GMX01364011F
GMX01365011G
GMX01366011H
GMX01367011I
GMX01368011J
GMX01369011K
Array Image
DotAllele Score
Gene/Polysite/Allele
Value
KRAS2
KRAS.POLYSITE
K1
K2
K3
K4
K5
K7
s 5 7 10
s 1 0 0
s 1 0 0
s 0 0 0
s 2 1 0
s 1 0 1

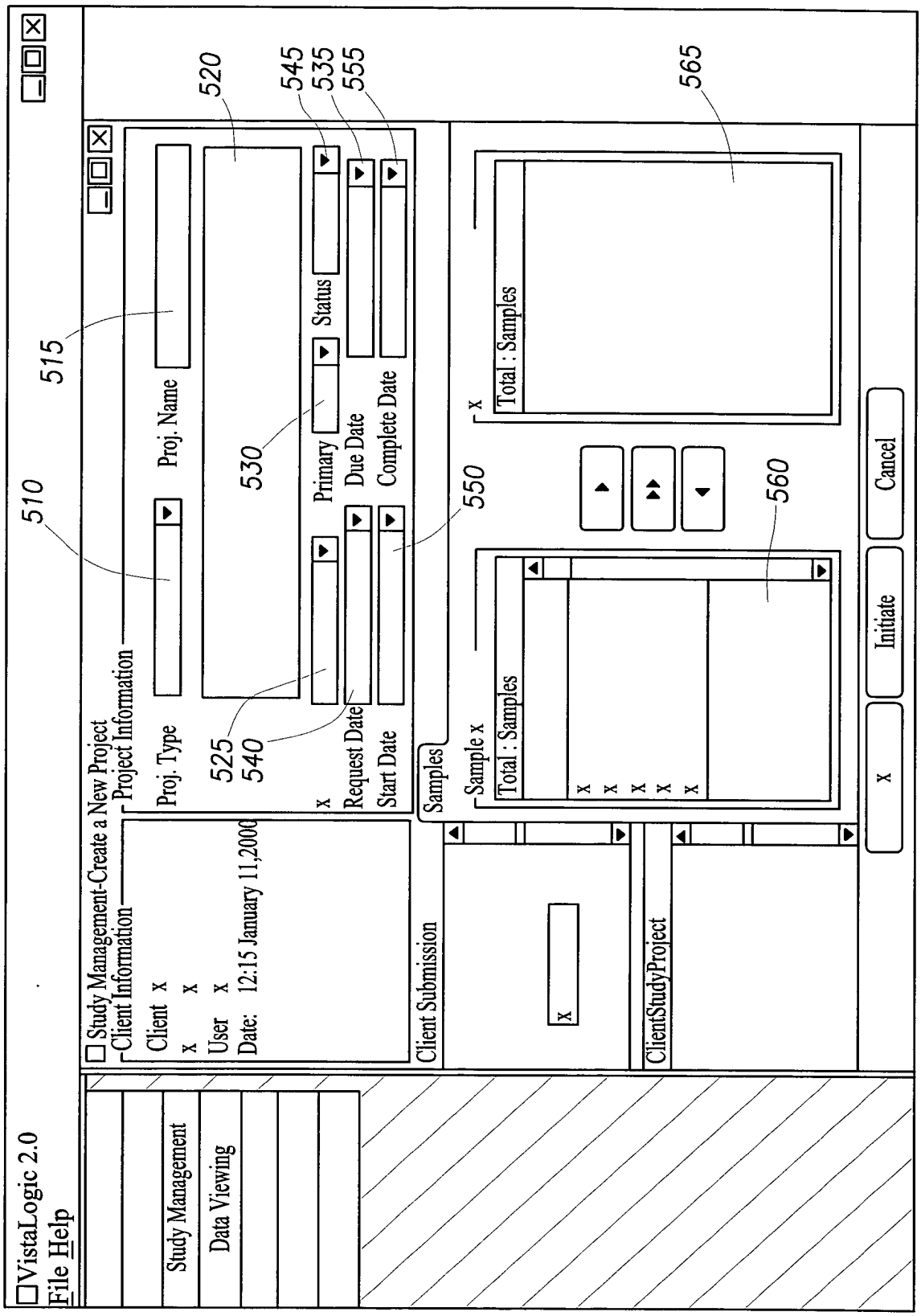

VistaLogic 2.0
File Help
Study Management
Data Viewing
Study Management-Create a New Project
Client Information
Client x
x x
User x
Date: 12:15 January 11,2000
Project Information
Proj. Type
Proj. Name
Primary
Status
Request Date
Due Date
Start Date
Complete Date
Client Submission
Samples
Sample x
Total : Samples
ClientStudyProject
Initiate
Cancel
510
515
520
525
530
535
540
545
550
555
560
565

FIG.8

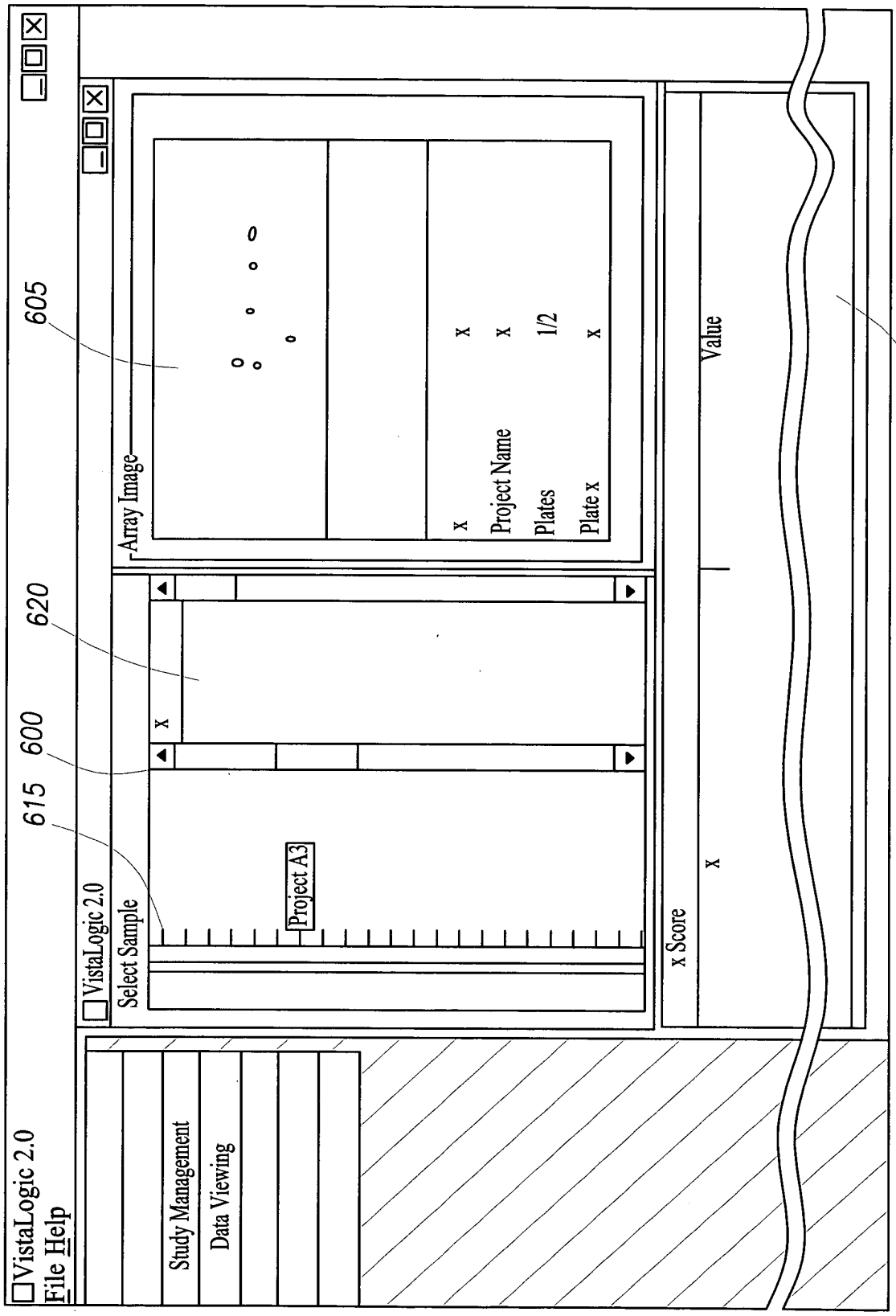

VistaLogic 2.0
File Help
Study Management
Data Viewing
VistaLogic 2.0
Select Sample
Project A3
x
Array Image
x
Project Name
x
Plates
1/2
Plate x
x
x Score
x
Value
605
620
600
615
610

FIG.9

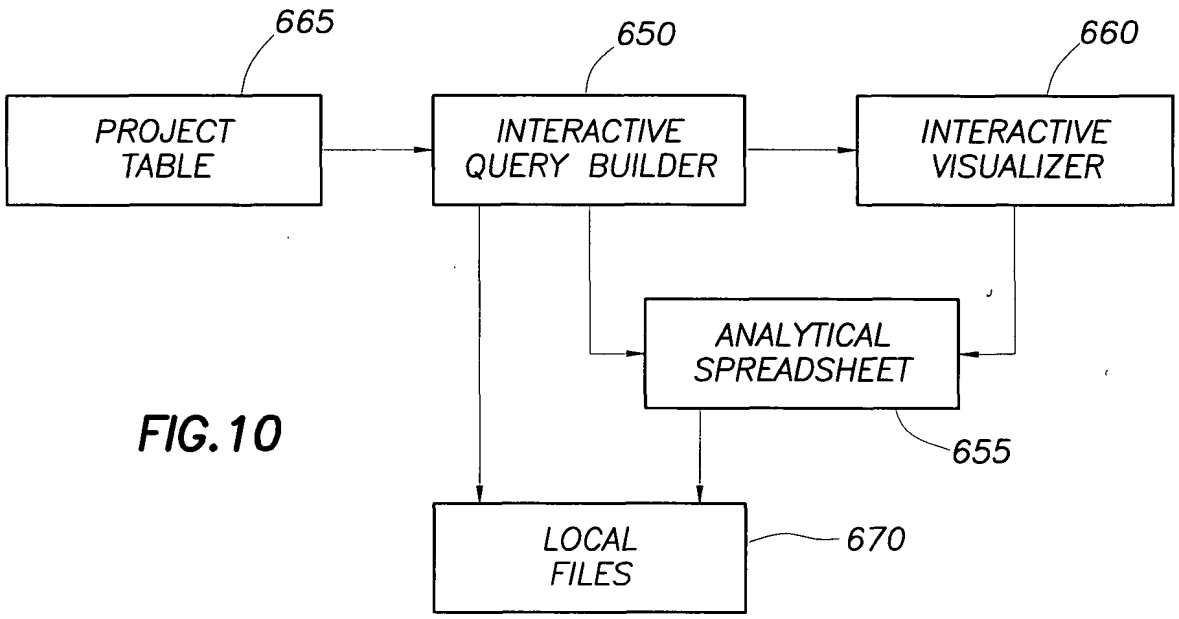

665
650
660
PROJECT TABLE
INTERACTIVE QUERY BUILDER
INTERACTIVE VISUALIZER
ANALYTICAL SPREADSHEET
655
LOCAL FILES
670

FIG. 10

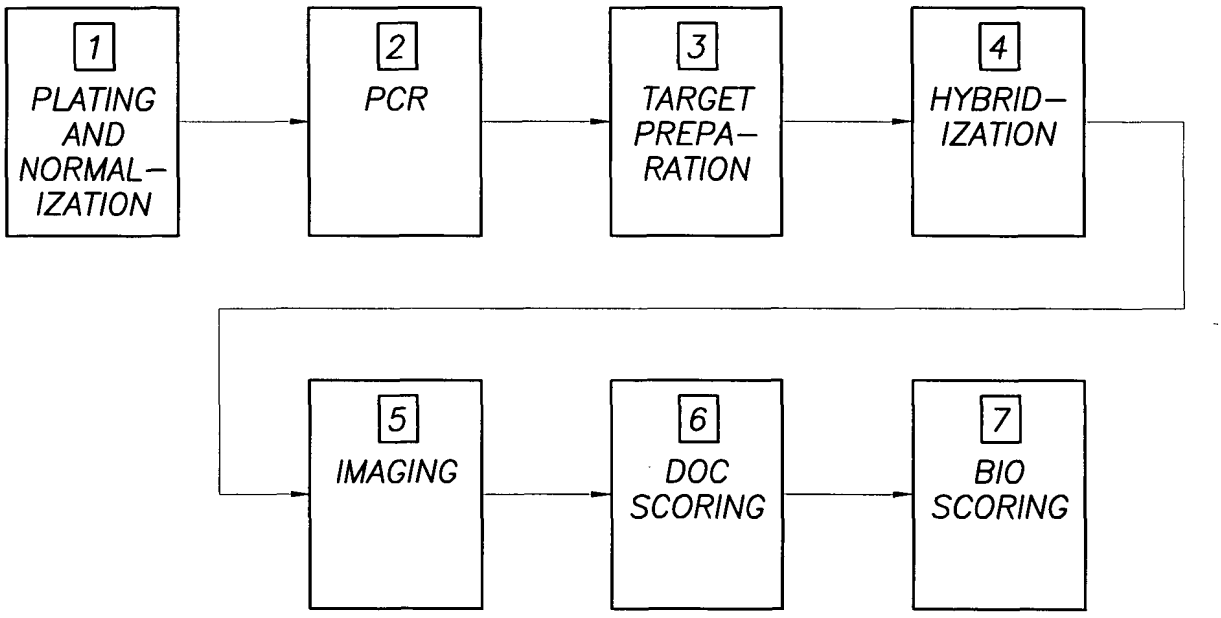

1
PLATING AND NORMAL–IZATION
2
PCR
3
TARGET PREPA–RATION
4
HYBRID–IZATION
5
IMAGING
6
DOC SCORING
7
BIO SCORING

FIG. 11

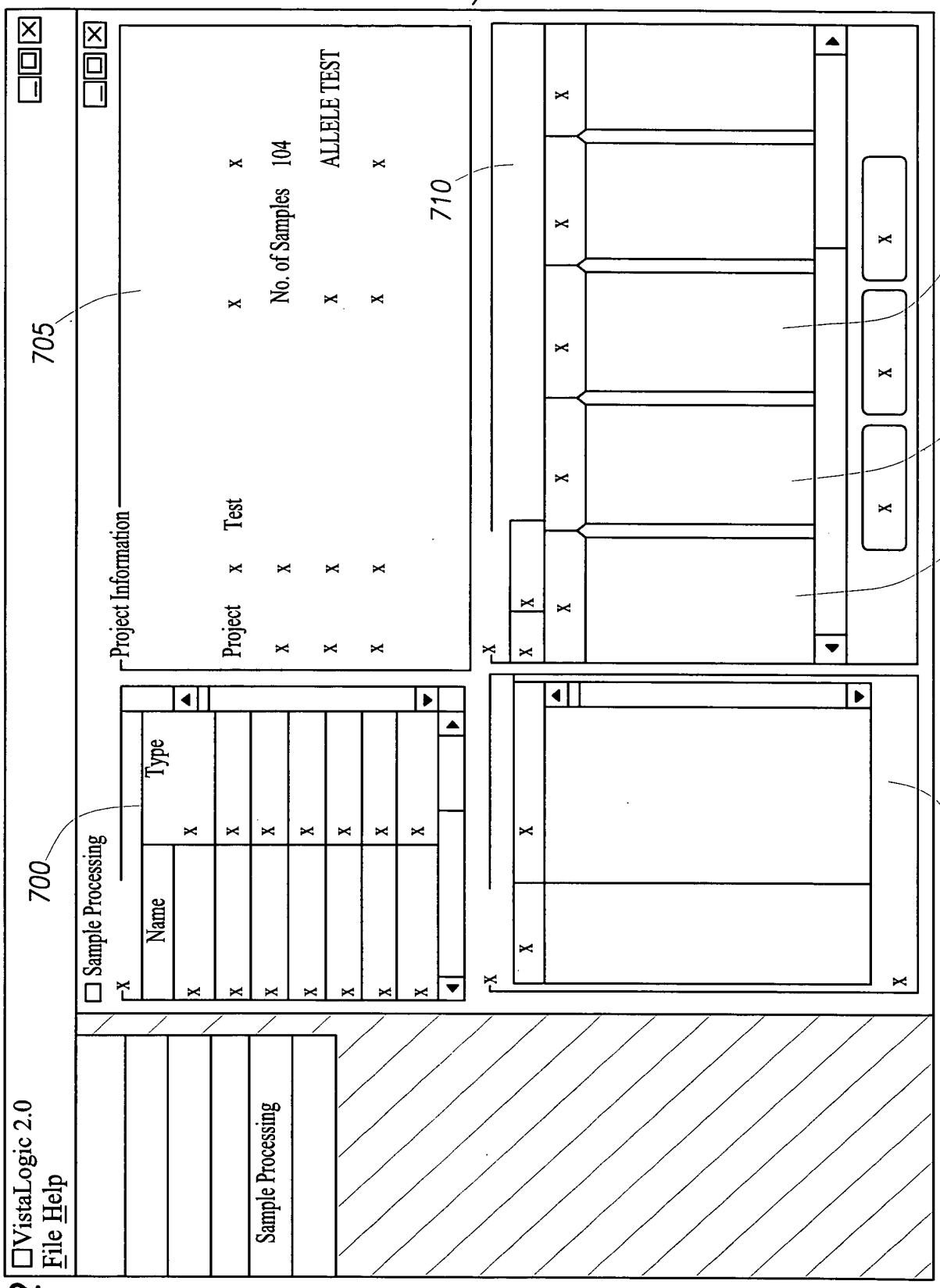

VistaLogic 2.0
File Help
Sample Processing
Sample Processing
Name
Type
Project Information
Project
Test
No. of Samples 104
ALLELE TEST
700
705
710
715
720
725
730

FIG. 12

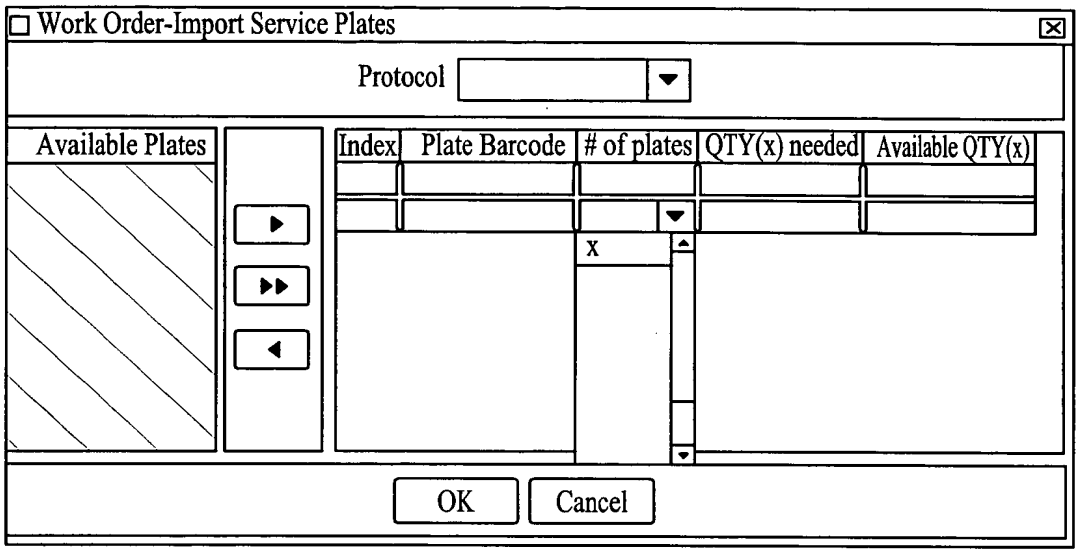

Work Order-Import Service Plates
Protocol
Available Plates
Index
Plate Barcode
# of plates
QTY(x) needed
Available QTY(x)
x
OK
Cancel

FIG. 13

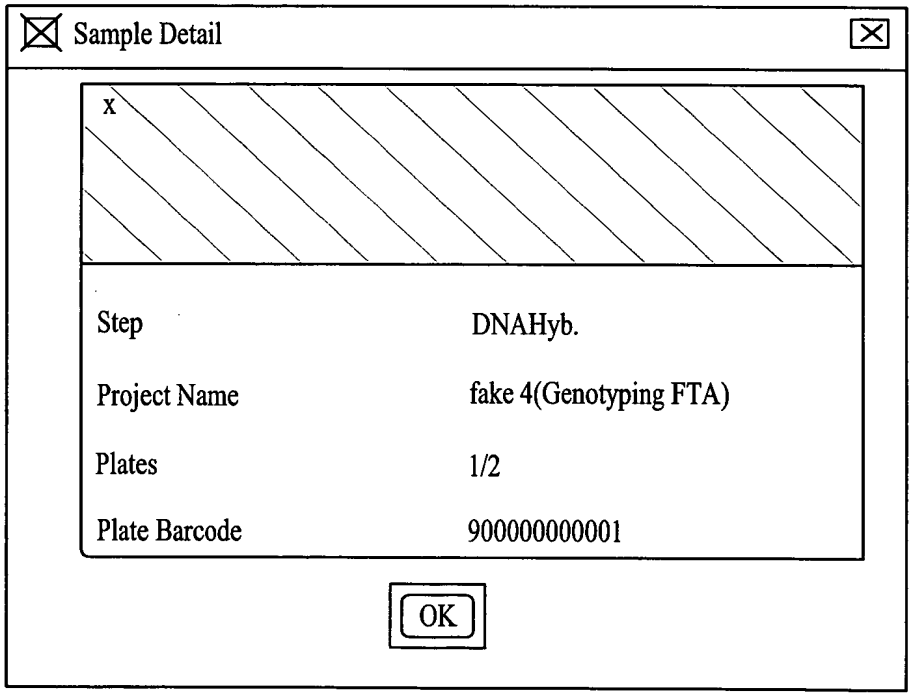

Sample Detail
x
Step
DNAHyb.
Project Name
fake 4(Genotyping FTA)
Plates
1/2
Plate Barcode
900000000001
OK

FIG. 16

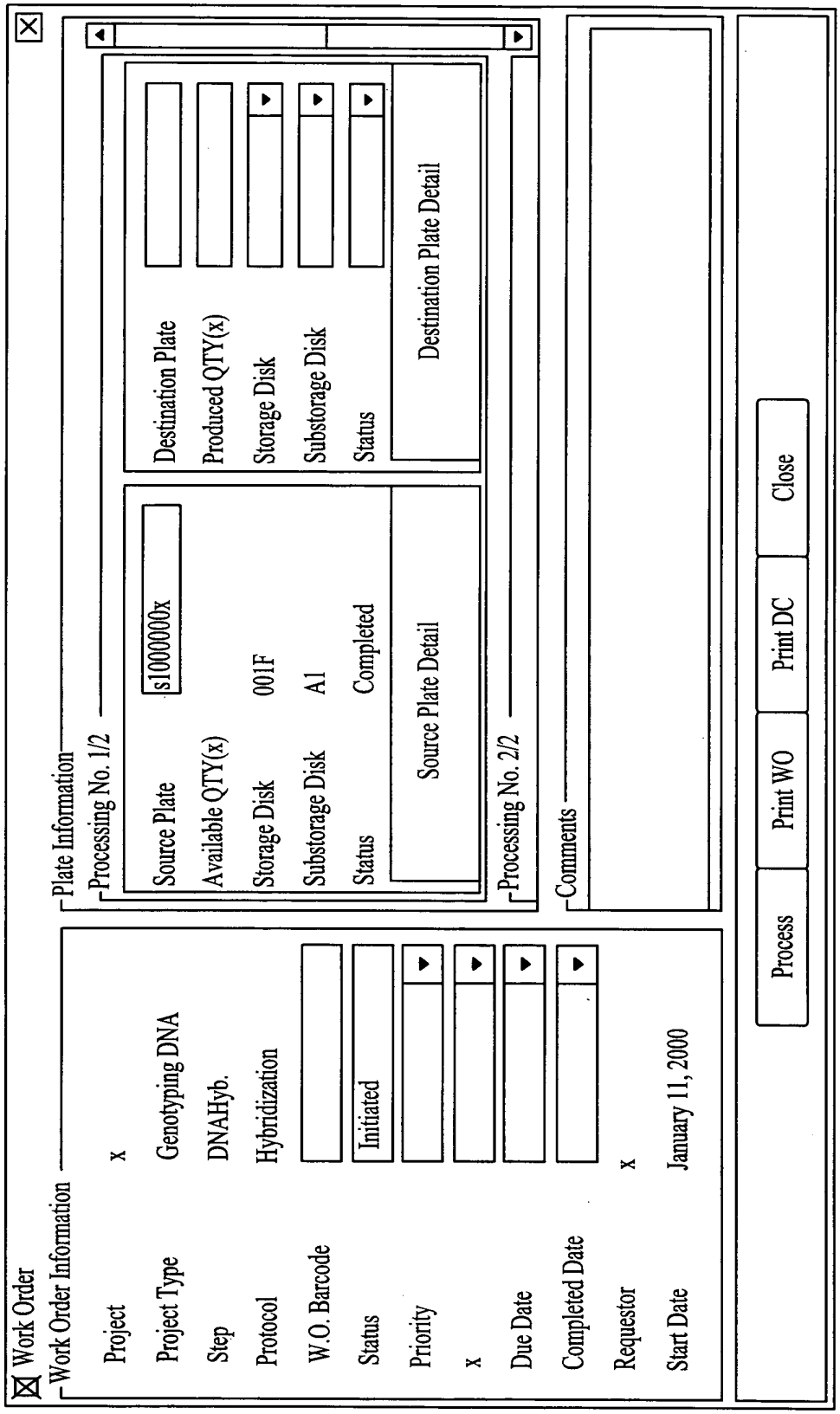

Work Order
Work Order Information
Project
x
Project Type
Genotyping DNA
Step
DNAHyb.
Protocol
Hybridization
W.O. Barcode
Status
Initiated
Priority
x
Due Date
Completed Date
Requestor
x
Start Date
January 11, 2000
Plate Information
Processing No. 1/2
Source Plate
s1000000x
Available QTY(x)
Storage Disk
001F
Substorage Disk
A1
Status
Completed
Source Plate Detail
Destination Plate
Produced QTY(x)
Storage Disk
Substorage Disk
Status
Destination Plate Detail
Processing No. 2/2
Comments
Process
Print WO
Print DC
Close

FIG. 14

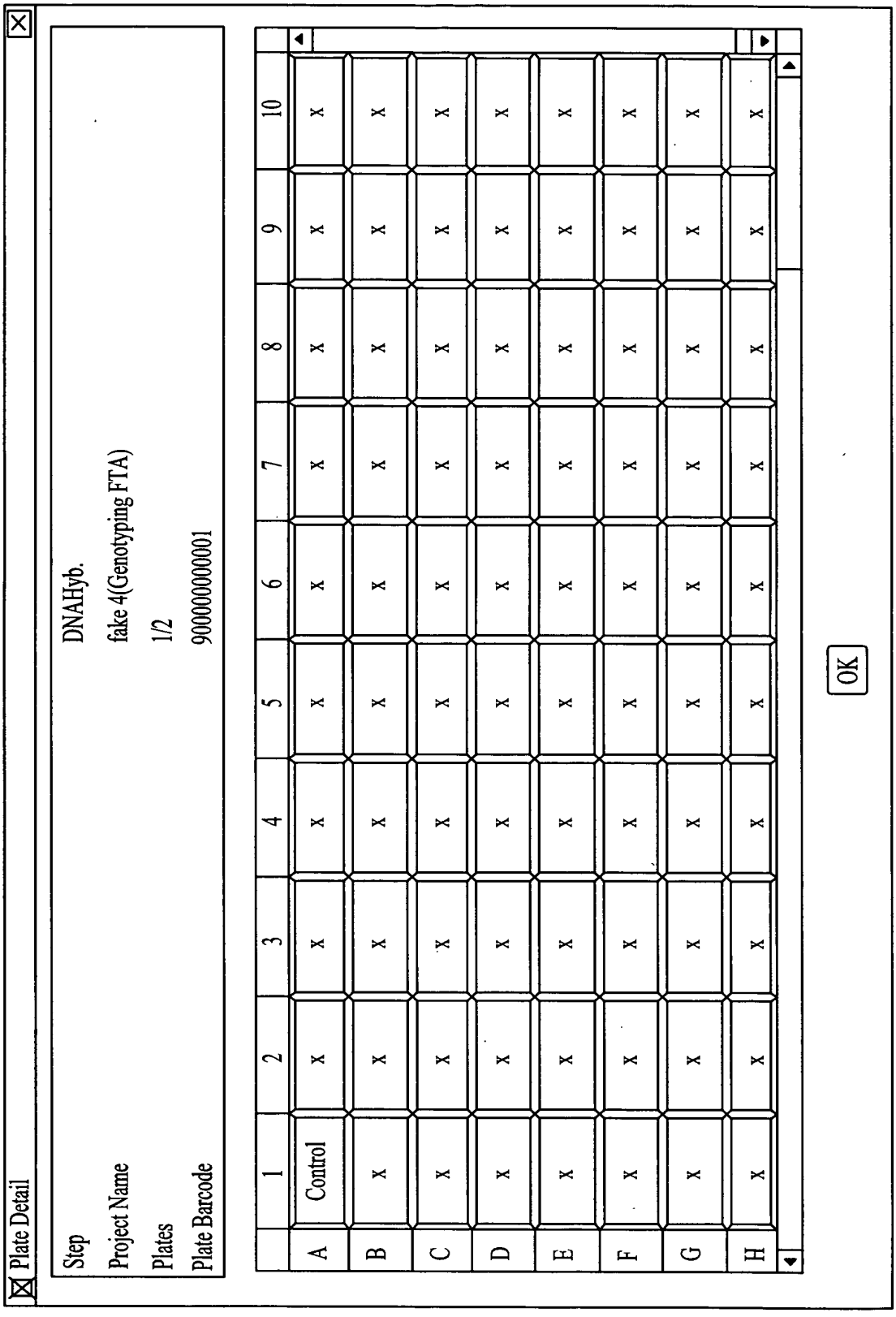


Plate Detail
Step
DNAHyb.
Project Name
fake 4(Genotyping FTA)
Plates
1/2
Plate Barcode
900000000001
1 2 3 4 5 6 7 8 9 10
A Control x x x x x x x x x
B x x x x x x x x x
C x x x x x x x x x
D x x x x x x x x x
E x x x x x x x x x
F x x x x x x x x x
G x x x x x x x x x
H x x x x x x x x x
OK

FIG. 15

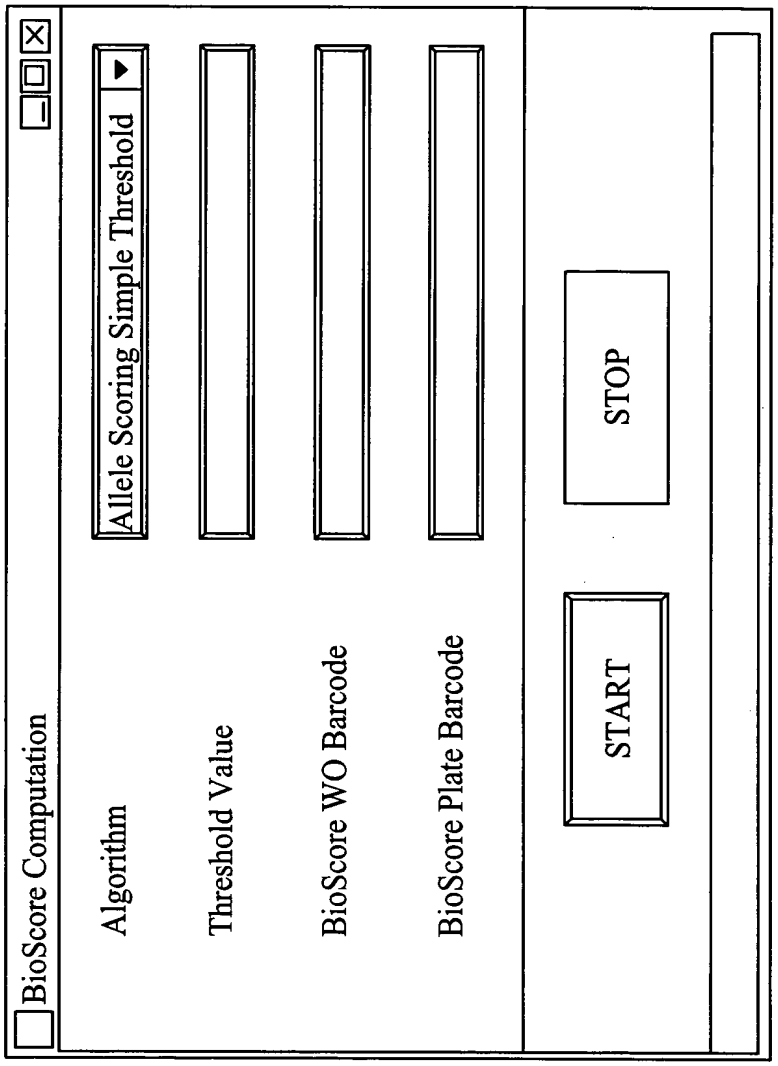

BioScore Computation
Algorithm
Allele Scoring Simple Threshold
Threshold Value
BioScore WO Barcode
BioScore Plate Barcode
START
STOP

FIG. 17

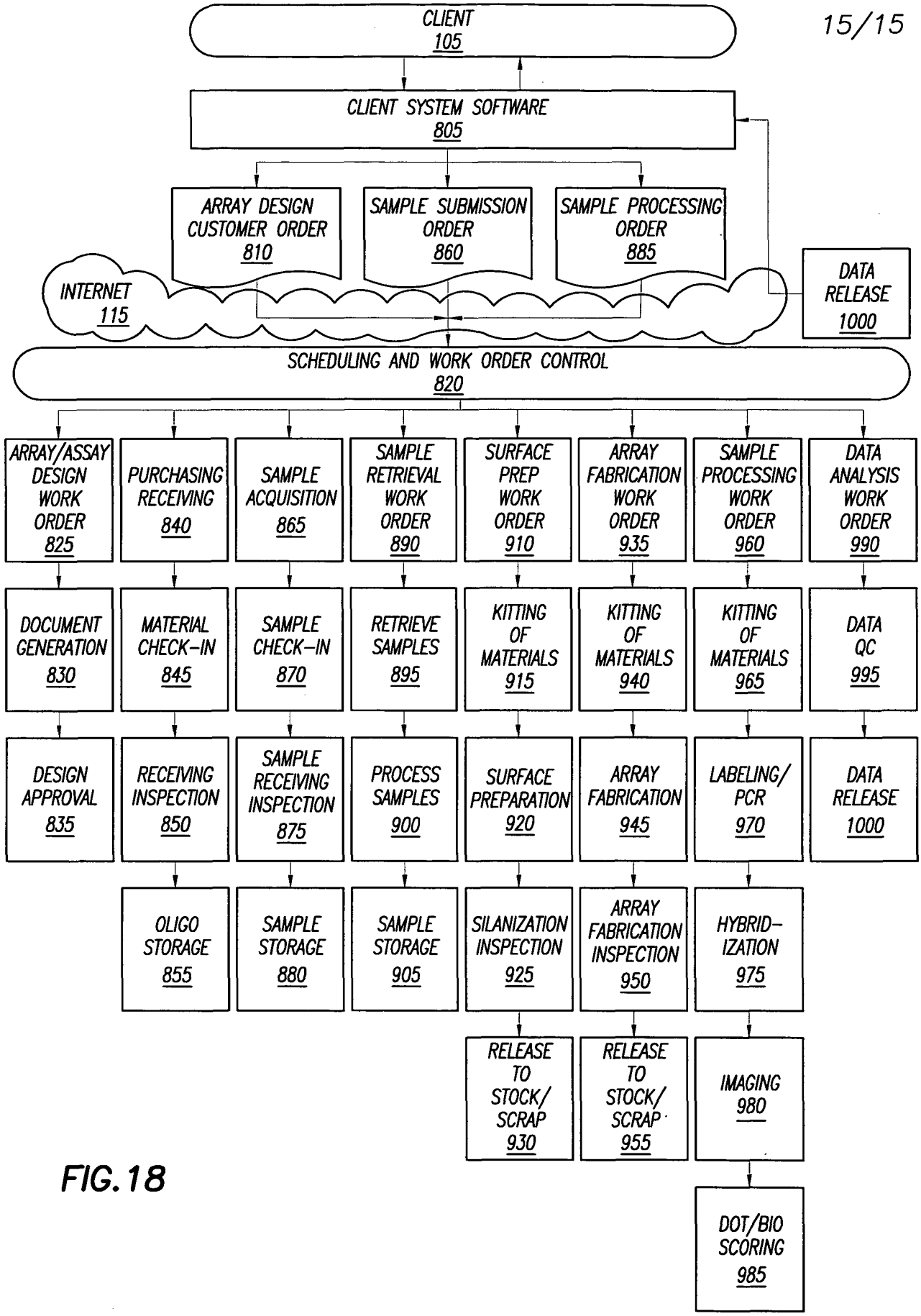

CLIENT
105
CLIENT SYSTEM SOFTWARE
805
ARRAY DESIGN CUSTOMER ORDER
810
SAMPLE SUBMISSION ORDER
860
SAMPLE PROCESSING ORDER
885
INTERNET
115
DATA RELEASE
1000
SCHEDULING AND WORK ORDER CONTROL
820
ARRAY/ASSAY DESIGN WORK ORDER
825
PURCHASING RECEIVING
840
SAMPLE ACQUISITION
865
SAMPLE RETRIEVAL WORK ORDER
890
SURFACE PREP WORK ORDER
910
ARRAY FABRICATION WORK ORDER
935
SAMPLE PROCESSING WORK ORDER
960
DATA ANALYSIS WORK ORDER
990
DOCUMENT GENERATION
830
MATERIAL CHECK-IN
845
SAMPLE CHECK-IN
870
RETRIEVE SAMPLES
895
KITTING OF MATERIALS
915
KITTING OF MATERIALS
940
KITTING OF MATERIALS
965
DATA QC
995
DESIGN APPROVAL
835
RECEIVING INSPECTION
850
SAMPLE RECEIVING INSPECTION
875
PROCESS SAMPLES
900
SURFACE PREPARATION
920
ARRAY FABRICATION
945
LABELING/ PCR
970
DATA RELEASE
1000
OLIGO STORAGE
855
SAMPLE STORAGE
880
SAMPLE STORAGE
905
SILANIZATION INSPECTION
925
ARRAY FABRICATION INSPECTION
950
HYBRID-IZATION
975
RELEASE TO STOCK/ SCRAP
930
RELEASE TO STOCK/ SCRAP
955
IMAGING
980
DOT/BIO SCORING
985

FIG. 18